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09/613,952	07/11/2000	Antti Lappetelainen	NC18815	1944

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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
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2683

16

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/613,952

Applicant(s)

LAPPETELAINEN ET AL.

Examiner

Stephen M. D'Agosta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,5,7,9-15 and 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 is/are allowed.
- 6) ☐ Claim(s) 3, 5, 9-11,13,14,17,18 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 7,12,15 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9-22-03 have been fully considered but they are not persuasive:

1. After further review of the amendment, the examiner OBJECTS to claims 7, 12, 15 and 19. Claim 25 is in condition for allowance.

2. The applicant argues that prior art does not teach broadcasting power indication signal. The examiner disagrees since Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract) AND Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems) AND Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals.

3. For claim 22, the applicant argues that the prior art does not teach varying power-related signal for contention and contention-free periods. The examiner disagrees since Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems) AND Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals. It would be a design choice to modify the invention such that the power indication signal is generated during selected intervals (ie. during contention-free periods, during contentious periods, etc.) which is disclosed by Kamerman.

4. The applicant makes reference to IEEE 802.11 (page 2 in the amendment to the specification). Hence the rejection for Contention Free period(s) is derived from the IEEE 802.11 standard and hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN. Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a CF period wherein the power indication signal is transmitted to the mobile stations and Krishnakumar makes reference to an 802.11 wireless LAN and a Coordination Function (C1, L15-23). So it would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a CF period is used, to take advantage of this functionality as defined in the 802.11 specification during contention-free communication periods.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-15, 9-11, 13-14, 17 and 20-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia US 6,408,165 in view of Kamerman et al. U.S. Patent 6,067,291 and Gourgue U.S. Patent 5,564,075 (hereafter Raissinia, Kamerman and Gourgue).

As per **claims 9, 17 and 22**, Raissinia teaches a ~~multi-user~~ radio system having a network infrastructure for communicating data with which a first mobile and at least a second mobile communicate data (figure 1), the data forming portions of communication signals transmitted at selected power levels (title – power regulation), an improvement of an assembly for facilitating selection of the power levels at mobile stations which to transmit signals, said assembly comprising:

A signal generator coupled to the network infrastructure, ~~said signal generator~~ for generating a transmit power indication signal for transmission to at least a selected one of the first mobile and the at least second mobile, the transmit power indication signal of ~~a value representative indicating a maximum allowable power level permitted of the selected power levels at which each of the plurality of mobile stations are to transmit the communication signals (C3, L8-23 and C5, L54-67 to C6, L1-14).~~

but is silent on wherein the radio system defines beacon intervals within which beacon signals are broadcast by the network infrastructure and wherein the transmit power indication signal generated by said signal generator is broadcast as part of the beacon signals AND during selected intervals.

With further regard to claim 22, Raissinia is silent on contention/contention-free periods.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract).

Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems).

Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals. It would be a design choice to modify the invention such that the power indication signal is

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generated during selected intervals (ie. during contention-free periods, during contentious periods, etc.) which is disclosed by Kamerman above.

(Claim 22) The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal during both the DCF period an/or the PCF period as a design choice since both options are available per the standard (and Kamerman teaches both periods).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claims 10 and 20**, Raissinia teaches claim 1/17 **but is silent on** wherein radio system defines a contention period and wherein the transmit power indication signal generated by said signal generator is transmitted broadcasted ~~to all of the first and at least second mobile stations respectively~~ (during the contention period – claim 20).

The examiner points out that the applicant teaches the DCF period is derived from the IEEE 802.11 standard and is a mandatory function that defines a Contention Period (spec. pg. 3, L14-17). Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a DCF period wherein the power indication signal is transmitted to the mobile stations.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a DCF is defined and used to send the transmit power indication signal, to take advantage of this functionality as defined in the 802.11 specification during contention communication periods.

As per **claim 11**, Raissinia teaches claim 10 **but is silent on** wherein radio system defines a contention period comprises a plurality of definable sub-periods and wherein the transmit power indication signal ~~generated by said signal generator~~ is generated at least one of the plurality of definable sub-periods of the contention period.

The examiner points out that the 802.11 standard, as referenced by the applicant, has contention-based AND contention-free access methods. Hence, one skilled in the art would transmit the power indication signal during the DCF period of the contention free period as a design choice.

Kamerman teaches a contention window/period that has definable sub-periods (eg. slot times) in figure 1).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a DCF is defined and used to send the transmit power

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indication signal, to take advantage of this functionality as defined in the 802.11 specification during contention communication periods.

As per **claim 13**, Raissinia teaches claim 9 **but is silent on** where the transmit power indication signal broadcast as part of the beacon signals is broadcast as a field within a beacon-frame body of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract). The broadcast channel is comprised of data frames which reads on the broadcasted beacon having a beacon-frame body.

The examiner takes **Official Notice** that information is usually transmitted in a framed sequence with fields/data being contained within the frames.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 14**, Raissinia teaches claim 9 **but is silent on** wherein the radio system is operable pursuant to a communications standard that defines a contention-free and contention period and wherein the transmit power indication signal is transmitted in a first manner during the contention-free period and in a second manner during the contention period.

The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal during both the DCF period an/or the PCF period as a design choice since both options are available per the standard.

Kammerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that DCF or PCF periods are defined and used to send the transmit power indication signal, to take advantage of these capabilities as defined in the 802.11 specification during contention/contention-free communication periods.

As per **claim 21**, Raissinia teaches claim 17, **but is silent on** wherein the transmit power indication signal broadcast as part of the beacon signals is broadcast as a field within a beacon-frame of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract). The broadcast channel is comprised of data frames which reads on the broadcasted beacon having a beacon-frame body.

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The examiner takes **Official Notice** that information is usually transmitted in a framed sequence with fields/data being contained within the frames.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 23**, Raissinia teaches claim 22 wherein the radio system defines beacon intervals within which beacon signals are broadcast by the network **but is silent on** wherein the transmit power indication signal generated by said signal generator is broadcast as part of the beacon signals.

Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems).

Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals. It would be a design choice to modify the invention such that the power indication signal is generated during selected intervals (ie. during contention-free periods, during contentious periods, etc.) which is disclosed by Kamerman above.

(Claim 22) The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal during both the DCF period an/or the PCF period as a design choice since both options are available per the standard (and Kamerman teaches both periods).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 24**, Raissinia teaches claim 23, **but is silent on** wherein the transmit power indication signal generated by said signal generator and broadcast as part of the beacon signals is transmitted as a field within a beacon-frame body of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract). The broadcast channel is comprised of data frames which reads on the broadcasted beacon having a beacon-frame body.

The examiner takes **Official Notice** that information is usually transmitted in a framed sequence with fields/data being contained within the frames.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

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Claims 2-4 3 and 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia/Kamerman/Gourgue in view of Krishnakumar et al. U.S. Patent 6,014,087 (hereafter referred to as Krishnakumar).

As per **claims 2 and 18**, Raissinia teaches claim 9/17 **but is silent on** wherein the radio system defines a contention-free period, and wherein the transmit power indication signal generated by said signal generator comprises the operation of transmitting is transmitted to a single selected one of the plurality of mobile stations first and the at least second one of the mobile stations during the contention-free period.

The examiner points out that the applicant teaches the PCF period is derived from the IEEE 802.11 standard. Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a PCF period wherein the power indication signal is transmitted to the mobile stations.

Krishnakumar makes reference to an 802.11 wireless LAN and the Point Coordination Function (C1, L15-23).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a PCF period is used, to take advantage of this functionality as defined in the 802.11 specification during contention-free communication periods.

As per **claims 3 and 19**, Raissinia teaches claim 9 2/18 wherein the signal generator generates a power correction information signal for transmission to a selected at least one of mobile stations the mobile stations which contains a value representative of an amount at which the selected one of the mobile stations is to communicate the its signal (C6, L5-8) the power correction information signal for use by the mobile station in selecting a power level at which to transmit the communication signals.

Claims 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia/Kamerman/Gourgue in view of Larsson et al. U.S. Patent 5,241,690 (hereafter Larsson).

As per **claim 5**, Raissinia teaches claim 4- 3 **but is silent on** further comprising a mobile station power-level calculator positioned at least one of the mobiles, said calculator operable responsive to the value of the transmit power indication signal and to the value of the power correction information signal to calculate a power level at which signals are to be generated transmitted by the selected at least one mobile station.

Gourgue teaches power control whereby the mobile station can calculate/deduce an optimal power transmit value based on the measured broadcast channel (from the Base Station) and an estimated propagation loss [abstract].

Larsson teaches power regulation that provides a signal instructing either a power increase or power decrease (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that the mobile station has a power-level calculator, to provide means for it to determine a power at which to generate signals based upon the original transmit power indication signal and the power correction signal.

Allowable Subject Matter

Claim 25 allowed. The prior art does not disclose such detailed, specific teachings.


Claims 7, 12, 15 and 19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

SMD 
10-3-03


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